

AMENDMENTS TO THE CLAIMS

This listing of claims will replace all prior versions, and listings, of claims in the application:

- 1 1. (Currently Amended) A method of binding a text body to a cover with an
2 adhesive to form a bound document, the method comprising:
3 applying an adhesive to ~~a~~an edge contacting surface of each of a plurality of
4 sheets of the text body on an individual sheet-wise basis, wherein the adhesive is applied
5 to the edge contacting surface of each of the plurality of sheets without applying any
6 adhesive to side surfaces of the corresponding sheet; and
7 adhering the plurality of sheets to the cover on an individual sheet-wise basis by
8 making line contact between the edge contacting surface of each sheet and the cover and
9 by curing the adhesive, wherein the applied adhesive forms a non-zero contact angle with
10 the edge contacting surface.
- 1 2. (Cancelled)
- 1 3. (Previously Amended) The method of claim 1, wherein a viscosity of the
2 adhesive is greater than 1000 centipoises and less than 15,000 centipoises.
- 1 4. (Currently Amended) The method of claim 1, comprising preparing each
2 of the plurality of sheets of the text body along the edge contacting surface prior to
3 applying the adhesive.

1 5. (Currently Amended) The method of claim 4, wherein preparing increases
2 a surface area of the edge contacting surface, exposes a plurality of base fibers of the
3 sheets, or increases the surface area and exposes the plurality of base fibers.

1 6. (Original) The method of claim 1, wherein applying the adhesive includes
2 dispensing the adhesive from a dispenser, the dispenser including a time-pressure system,
3 a piston-valve system, an auger-valve system, or a jetting system.

1 7. (Currently Amended) The method of claim 1, wherein applying the
2 adhesive includes dispensing the adhesive from a dispenser including a Micro-Electro-
3 Mechanical System, the adhesive is dispensed as a continuous bead on the edge
4 contacting surface, and a volume of the continuous bead is less than or equal to three
5 microliters.

1 8. (Currently Amended) The method of claim 7, wherein the Micro-Electro-
2 Mechanical System is a thermal ink jet device.

1 9. (Currently Amended) The method of claim 1, wherein applying the
2 adhesive includes dispensing the adhesive from a dispenser including a Micro-Electro-
3 Mechanical System, the adhesive is dispensed as a plurality of individual sub-beads on
4 the edge contacting surface, and a volume of each individual sub-bead is less than or
5 equal to ten nanoliters.

1 10. (Original) The method of claim 9, wherein the Micro-Electro-Mechanical
2 System is a thermal ink jet device.

1 11. (Currently Amended) The method of claim 1, wherein the plurality of
2 sheets ~~includes~~ include an unfolded sheet and the edge contacting surface of the unfolded
3 sheet is on an edge of the unfolded sheet.

1 12. (Currently Amended) The method of claim 11, comprising constraining
2 the unfolded sheet to maintain the edge of the unfolded sheet straight.

1 13. (Currently Amended) The method of claim 1, wherein the plurality of
2 sheets ~~includes~~ include a folded sheet and the edge contacting surface of the folded sheet
3 is on a folded edge of the folded sheet.

1 14. (Original) The method of claim 13, comprising constraining the folded
2 sheet to maintain the folded edge straight.

1 15. (Currently Amended) The method of claim 1, wherein the edge contacting
2 surface makes line contact with the cover in an area of a spine of the bound document.

1 16. (Original) The method of claim 1, wherein the adhesive is a hot melt
2 adhesive, a light curable adhesive, a two-part adhesive system or a moisture curable
3 adhesive.

1 17. (Original) The method of claim 1, wherein applying the adhesive places a
2 plurality of nanoliter volume beads on the contacting surface at an application rate of no
3 slower than 1 bead per 100 microseconds.

1 18. (Currently Amended) The method of claim 1, wherein the plurality of
2 sheets ~~includes~~ include a sheet of 20 lb bond paper, the adhesive is a light curable
3 adhesive having a viscosity of 10,000 to 12,000 centipoises, applying the adhesive
4 dispenses a plurality of individual sub-beads on the edge contacting surface, a volume of
5 each individual sub-bead is less than or equal to ten nanoliters, and the adhesive cures in
6 less than or equal to 20 seconds to bond the edge contacting surface to the cover.

1 19. (Original) The method of claim 1, comprising forming the cover around
2 the text body.

1 20. (Original) The method of claim 1, wherein the adhesive has a first surface
2 energy, the contacting surface has a second surface energy, and a difference between the
3 first surface energy and the second surface energy is from 13 to 25 dynes per cm.

1 21. (Currently Amended) The method of claim 1, wherein the plurality of
2 sheets ~~includes~~ include a cellulosic sheet having a surface energy of 30 to 37 dynes per
3 cm, the adhesive is a light curable adhesive having a surface energy of 50 to 55 dynes per
4 cm, applying the adhesive dispenses a plurality of individual sub-beads on the edge
5 contacting surface, a volume of each individual sub-bead is less than or equal to ten
6 nanoliters, and the adhesive cures in less than or equal to 20 seconds to bond the
7 contacting surface to the cover, and
8 wherein calculations for surface energy are based on Young's equation, and the
9 surface energy is determined from contact angles of a polar solvent and a nonpolar
10 solvent.

1 22. (Original) The method of claim 1, wherein the applied adhesive is a first
2 part of a two-part adhesive system and the method comprises applying a second part of
3 the two-part adhesive system to the cover prior to adhering the plurality of sheets to the
4 cover on an individual sheet-wise basis.

1 23. (Original) The method of claim 22, wherein the applied first part of the
2 two-part adhesive system forms a non-zero contact angle with the contacting surface.

1 24. (Original) The method of claim 23, wherein a viscosity of the first part of
2 the two-part adhesive system is greater than 1000 centipoises and less than 15,000
3 centipoises.

1 25. (Currently Amended) The method of claim 22, comprising preparing each
2 of the plurality of sheets of the text body along the edge contacting surface prior to
3 applying the first part of the two-part adhesive system.

1 26. (Currently Amended) The method of claim 25, wherein preparing
2 increases a surface area of the edge contacting surface, exposes a plurality of base fibers
3 of the sheets, or a combination thereof.

1 27. (Original) The method of claim 22, wherein applying the first part of the
2 two-part adhesive system includes dispensing the first part of the two-part adhesive
3 system from a dispenser, the dispenser including a time-pressure system, a piston-valve
4 system, an auger-valve system, or a jetting system.

1 28. (Currently Amended) The method of claim 22, wherein applying the first
2 part of the two-part adhesive system includes dispensing the first part of the two-part
3 adhesive system from a dispenser including a Micro-Electro-Mechanical System, the first
4 part of the two-part adhesive system is dispensed as a continuous bead on the edge
5 contacting surface, and a volume of the continuous bead is less than or equal to three
6 microliters.

1 29. (Currently Amended) The method of claim 28, wherein the Micro-Electro-
2 Mechanical System is a thermal ink jet device.

1 30. (Currently Amended) The method of claim 22, wherein applying the first
2 part of the two-part adhesive system includes dispensing the first part of the two-part
3 adhesive system from a dispenser including a Micro-Electro-Mechanical System, the first
4 part of the two-part adhesive system is dispensed as a plurality of individual sub-beads on
5 the edge contacting surface, and a volume of each individual sub-bead is less than or
6 equal to ten nanoliters.

1 31. (Original) The method of claim 30, wherein the Micro-Electro-Mechanical
2 System is a thermal ink jet device.

1 32. (Currently Amended) The method of claim 22, wherein the plurality of
2 sheets ~~includes~~ include an unfolded sheet and the contacting surface of the unfolded sheet
3 is on an edge of the unfolded sheet.

1 33. (Currently Amended) The method of claim 32, comprising constraining
2 the unfolded sheet to maintain the edge of the unfolded sheet straight.

1 34. (Currently Amended) The method of claim 22, wherein the plurality of
2 sheets ~~includes~~ include a folded sheet and the edge contacting surface of the folded sheet
3 is on a folded edge of the folded sheet.

1 35. (Original) The method of claim 34, comprising constraining the folded
2 sheet to maintain the folded edge straight.

1 36. (Currently Amended) The method of claim 22, wherein the edge
2 contacting surface makes line contact with the cover in an area of a spine of the bound
3 document.

1 37. (Currently Amended) The method of claim 22, wherein applying the first
2 part of the two-part adhesive system places a plurality of nanoliter volume beads on the
3 edge contacting surface at an application rate of no slower than 1 bead per 100
4 microseconds.

1 38. (Currently Amended) The method of claim 22, wherein the plurality of
2 sheets ~~includes~~ include a sheet of 20 lb bond paper, the first part of the two-part adhesive
3 system has a viscosity of 10,000 to 12,000 centipoises, applying the first part of the two-
4 part adhesive system dispenses a plurality of individual sub-beads on the edge contacting
5 surface, a volume of each individual sub-bead is less than or equal to ten nanoliters, and
6 the two-part adhesive system cures in less than or equal to 20 seconds to bond the edge
7 contacting surface to the cover.

1 39. (Original) The method of claim 22, comprising forming the cover around
2 the text body.

1 40. (Original) The method of claim 22, wherein the first part of the two-part
2 adhesive system has a first surface energy, the contacting surface has a second surface
3 energy, and a difference between the first surface energy and the second surface energy is
4 from 13 to 25 dynes per cm.

1 41. (Currently Amended) The method of claim 22, wherein the plurality of
2 sheets ~~includes~~ include a cellulosic sheet having a surface energy of 30 to 37 dynes per
3 cm, the first part of the two-part adhesive system is a portion of a light curable adhesive
4 system having a surface energy of 50 to 55 dynes per cm, applying the first part of the
5 two-part adhesive system dispenses a plurality of individual sub-beads on the edge
6 contacting surface, a volume of each individual sub-bead is less than or equal to ten
7 nanoliters, and the light curable adhesive system cures in less than or equal to 20 seconds
8 to bond the contacting surface to the cover, and
9 wherein calculations for surface energy are based on Young's equation, and the
10 surface energy is determined from contact angles of a polar solvent and a nonpolar
11 solvent.

1 42.-71. (Cancelled)

1 72. (New) The method of claim 1, wherein the edge contacting surface of each
2 of the sheets is provided on an edge of the corresponding sheet, and wherein the side
3 surfaces of each of the sheets extend from the edge along respective sides of the
4 corresponding sheet.

1 73. (New) A method of binding a text body to a binding structure with an
2 adhesive to form a bound document, the method comprising:
3 applying an adhesive to an edge contacting surface of each of a plurality of sheets
4 of the text body on an individual sheet-wise basis, wherein the adhesive is applied to the
5 edge contacting surface of each of the plurality of sheets without applying any adhesive
6 to side surfaces of the corresponding sheet; and
7 adhering the plurality of sheets to the binding structure on an individual sheet-
8 wise basis by making line contact between the edge contacting surface of each sheet and
9 the binding structure and by curing the adhesive, wherein the applied adhesive forms a
10 non-zero contact angle with the edge contacting surface.

1 74. (New) The method of claim 73, wherein the binding structure includes an
2 intermediary piece between the plurality of sheets and a cover.

1 75. (New) The method of claim 73, comprising preparing each of the plurality
2 of sheets of the text body along the edge contacting surface prior to applying the
3 adhesive.

1 76. (New) The method of claim 75, wherein preparing increases a surface
2 area of the edge contacting surface, exposes a plurality of base fibers of the sheets, or
3 increases the surface area and exposes the plurality of base fibers.

- 1 77. (New) The method of claim 73, wherein the edge contacting surface of
- 2 each of the sheets is provided on an edge of the corresponding sheet, and wherein the side
- 3 surfaces of each of the sheets extend from the edge along respective sides of the
- 4 corresponding sheet.